

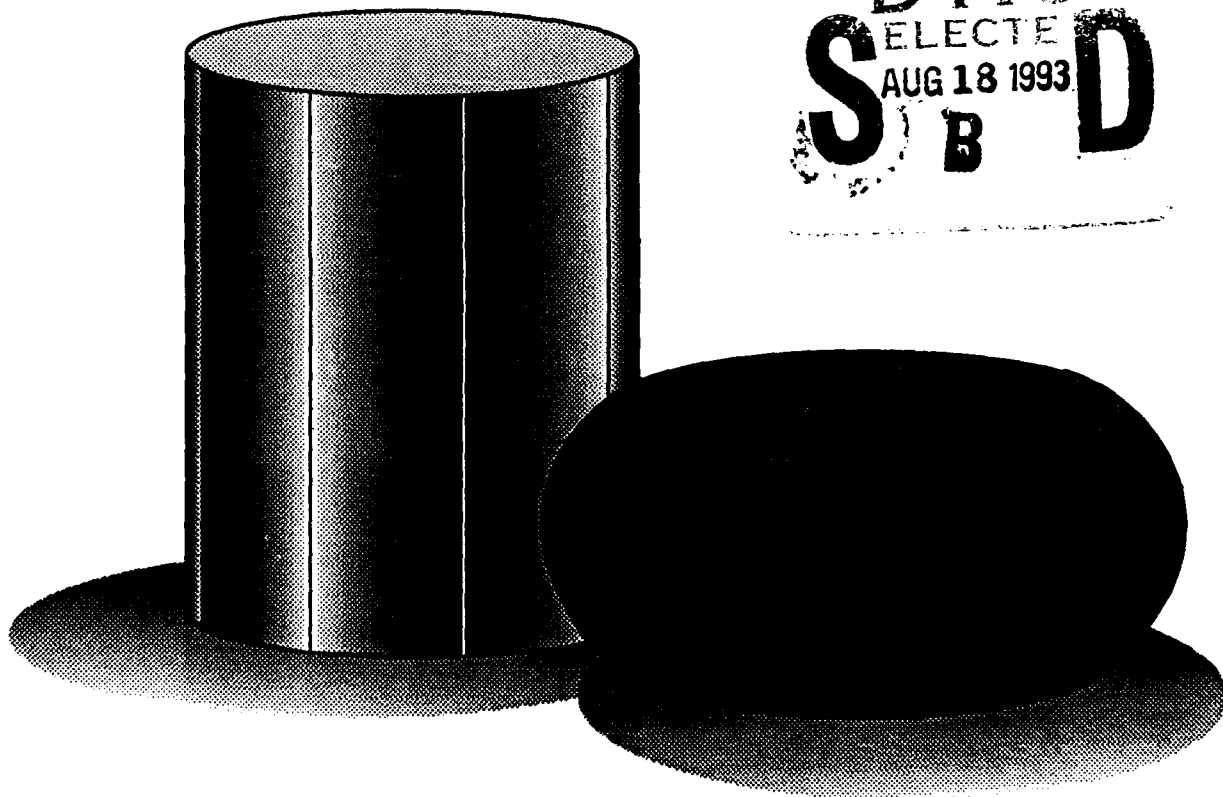
AD-A268 299



100

Atlas of Formability

Cast Aluminum 6009
Flow Stress Curves



DTIC
ELECTE
AUG 18 1993
S B D

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

93-18845



NCEMT

02 8 16 024

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE September 30, 1991	3. REPORT TYPE AND DATES COVERED Final, June 30, 1991-September 30, 1991		
4. TITLE AND SUBTITLE Atlas of Formability Cast Aluminum 6009		5. FUNDING NUMBERS C-N00140-88-C-RC21		
6. AUTHOR(S) Howard A. Kuhn				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National Center for Excellence in Metalworking Technology (NCEMT) 1450 Scalp Avenue Johnstown, PA 15904		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Naval Industrial Resources Support Activity Building 75-2, Naval Base Philadelphia, PA 19112-5078		10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT		12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words) In this investigation, flow behavior of Aluminum 6009 alloy was studied by conducting compression tests over a wide range of temperatures and strain rates. Stress-strain curves were recorded for each test condition. These data are essential in metalworking process design or finite element analysis of high temperature deformation.				
14. SUBJECT TERMS Aluminum 6009, High Temperature Deformation, Metalworking			15. NUMBER OF PAGES 22	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT	

**ATLAS OF FORMABILITY
CAST ALUMINUM 6009**

by

Howard A. Kuhn

**National Center for Excellence in Metalworking Technology
1450 Scalp Avenue
Johnstown, PA 15904**

for

**Naval Industrial Resource Support Activity
Building 75-2, Naval Base
Philadelphia, PA 19112-5078**

September 31, 1991

The views, opinions, and/or findings contained in this report are those of the authors and should not be construed as an official Department of the Navy position, policy, or decision, unless so designated by other documentation

TABLE OF CONTENTS

Testing Parameters	1
Stress-Strain Curves	2

DTIC QUALITY INSPECTED 3

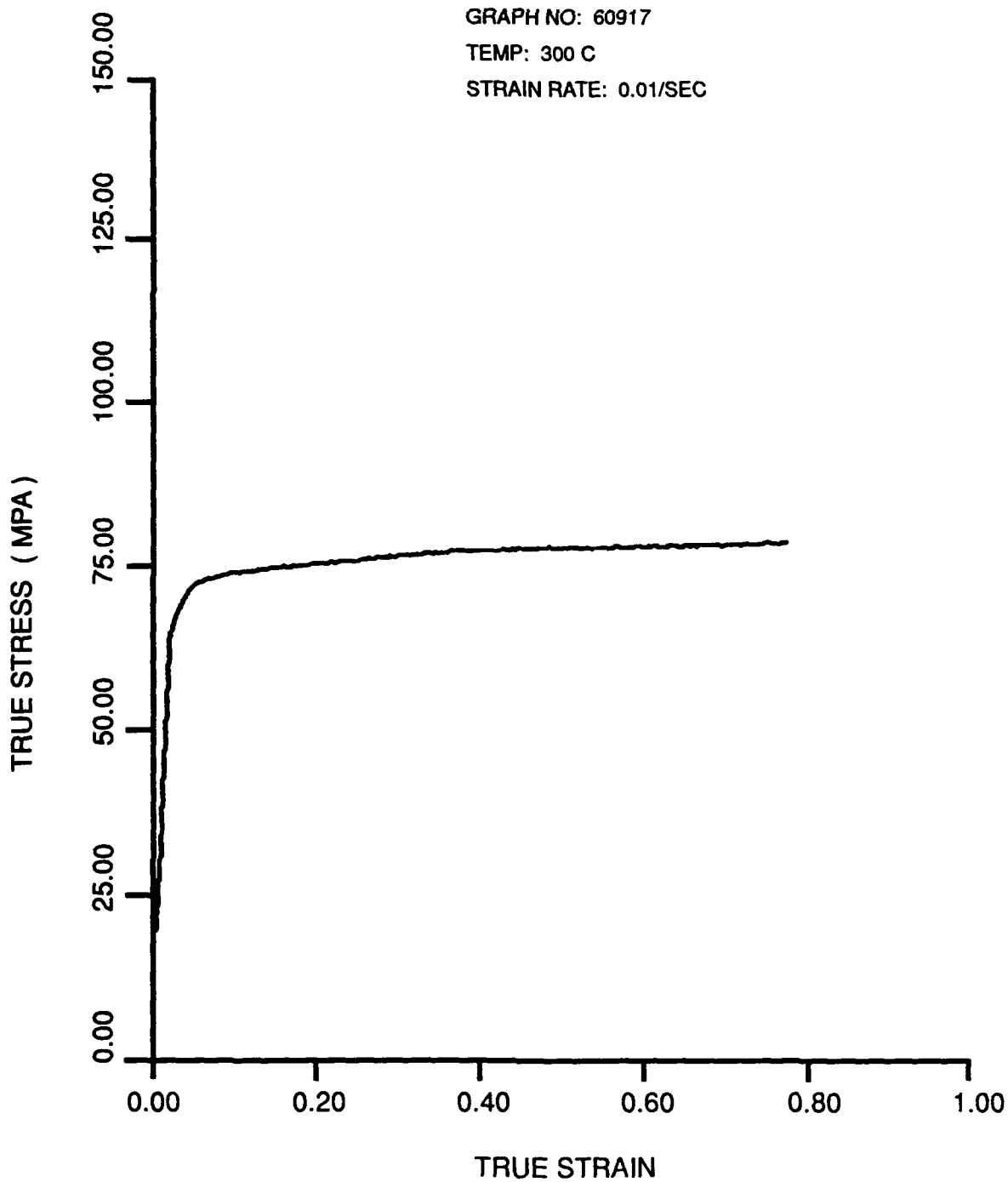
ST #A, AUTH USNAVIRSA (MR PLONSKY 8/443-6684)
PER TELECON, 17 AUG 93 CB

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By <i>per telecon</i>	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
<i>A-1</i>	

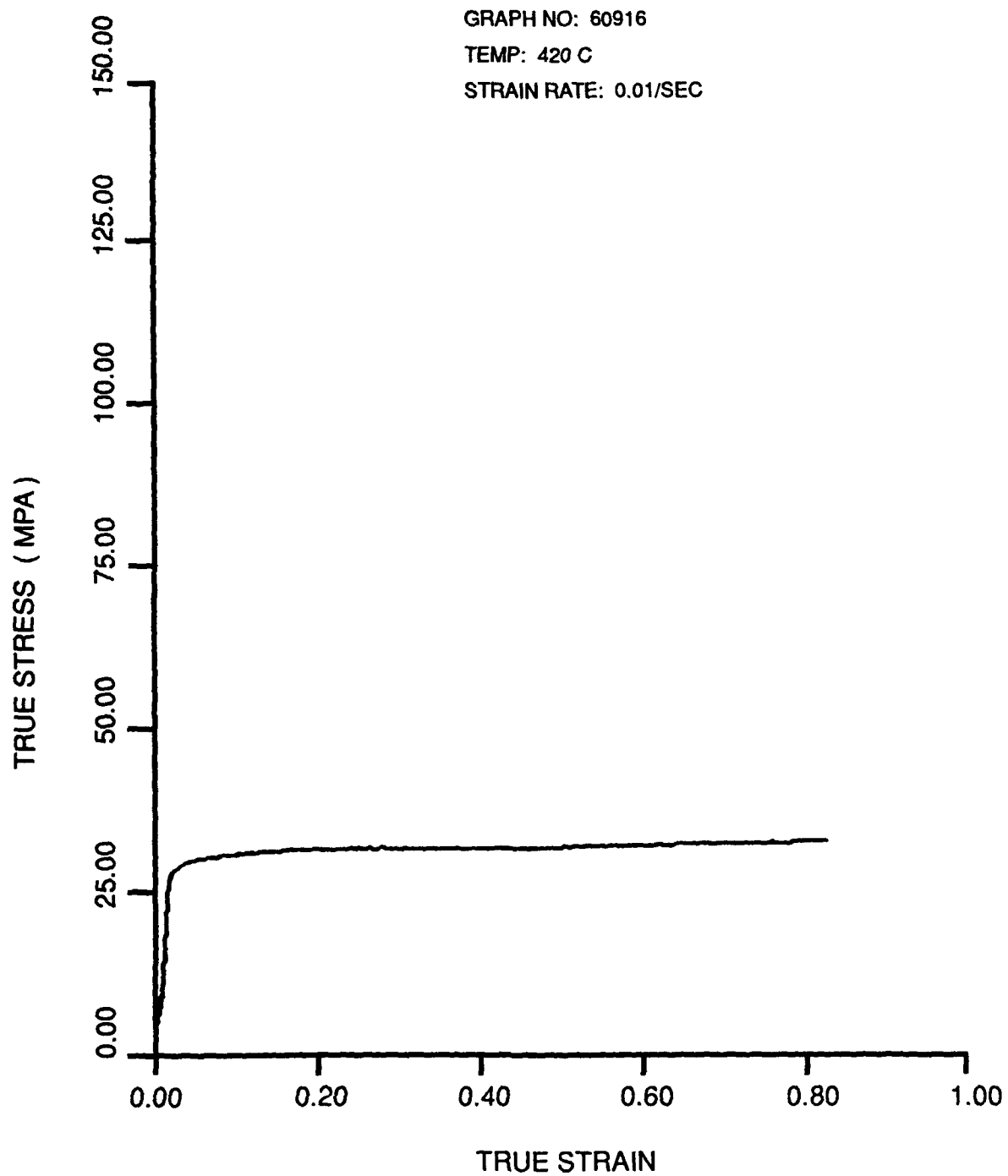
Cast Aluminum 6009

Testing Parameters

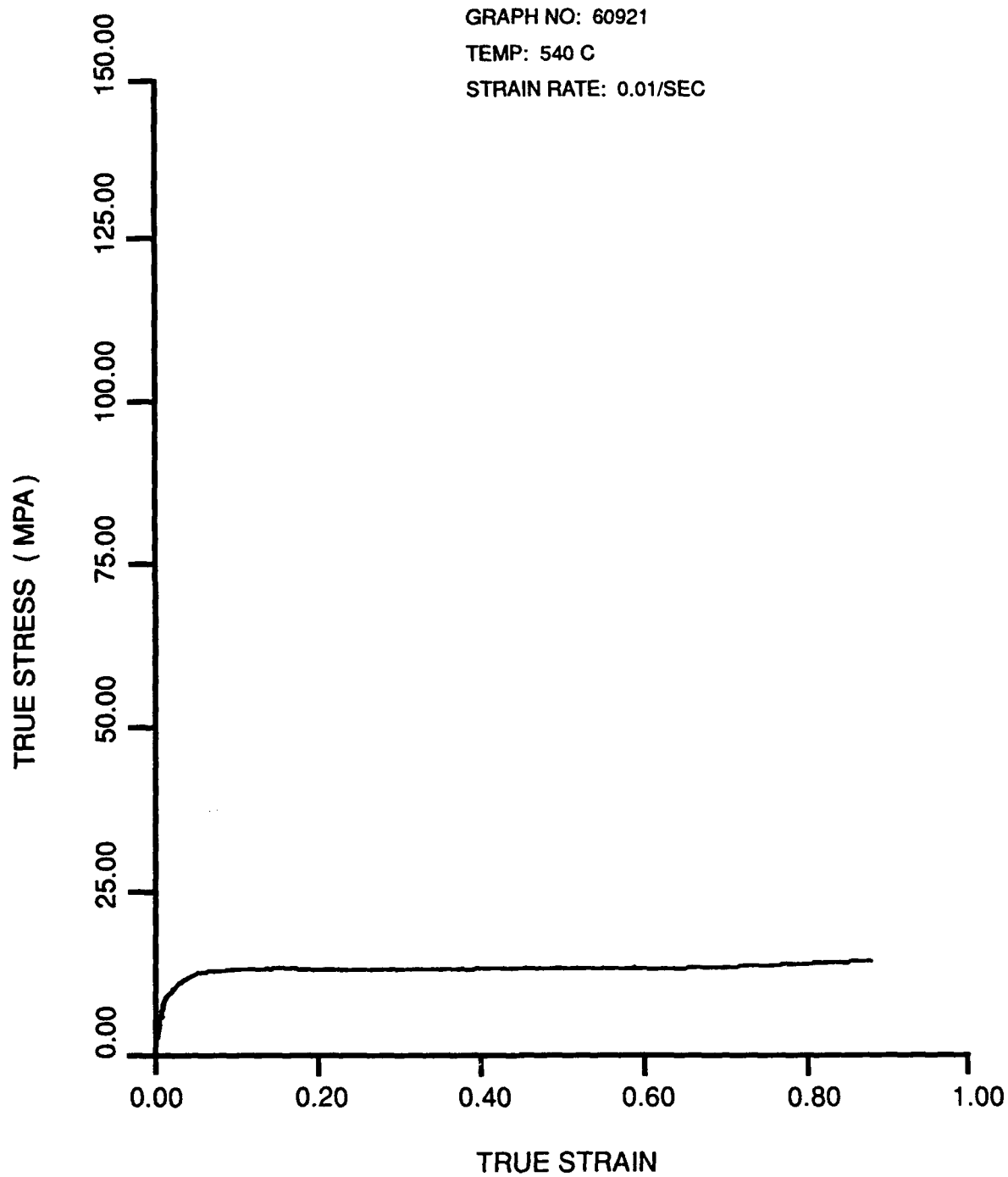
Strain Rate (1/sec.)	Temperature (deg. C)	Graph Number	Page Number
0.01	300	60917	2
0.01	420	60916	3
0.01	540	60921	4
0.01	Combination	60925	5
0.1	360	60914	6
0.1	480	60915	7
0.1	Combination	60926	8
1.0	300	60913	9
1.0	420	60909	10
1.0	540	60912	11
1.0	Combination	60927	12
5.0	360	60901	13
5.0	480	60902	14
5.0	Combination	60928	15
12.0	300	60904	16
12.0	420	60903	17
12.0	540	60906	18
12.0	Combination	60929	19



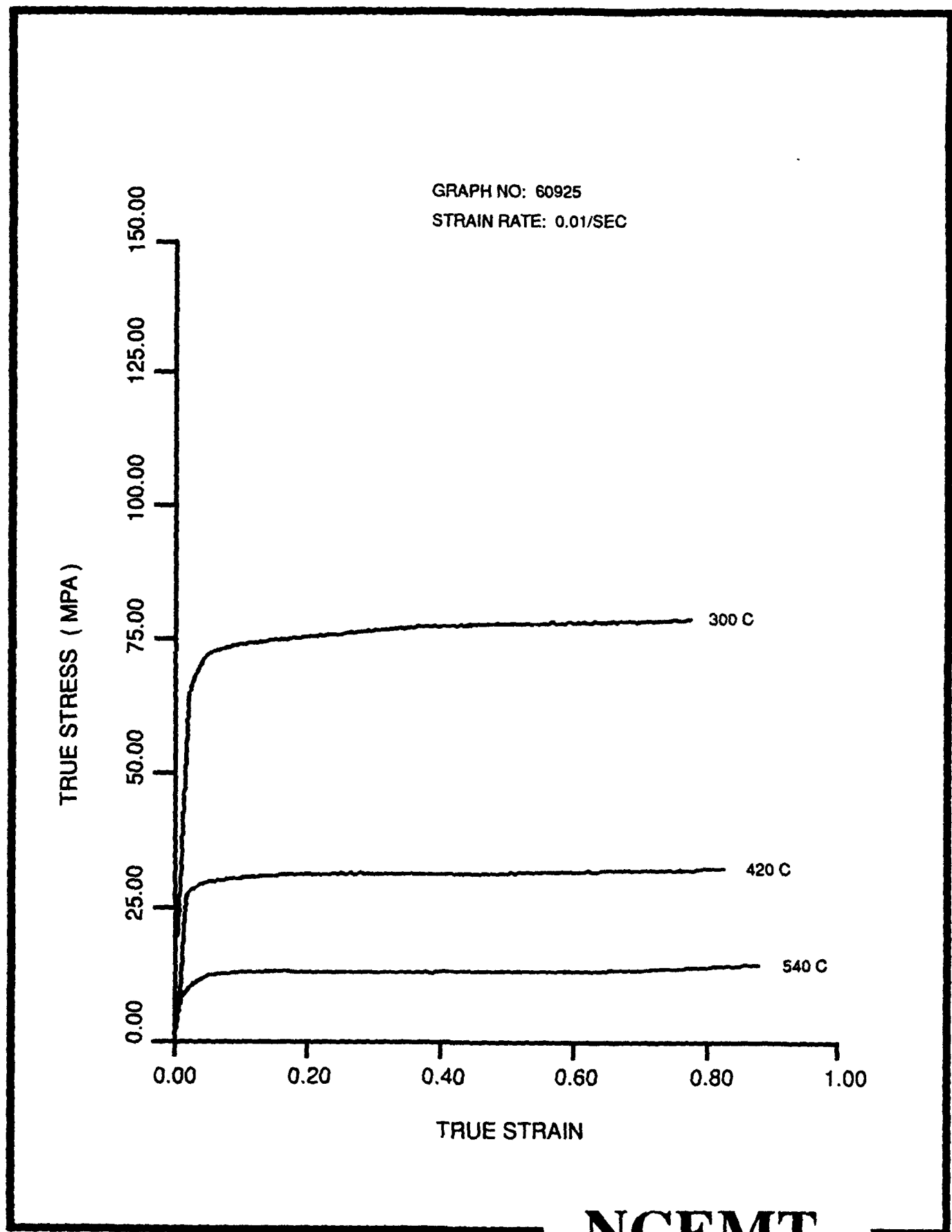
NCEMT

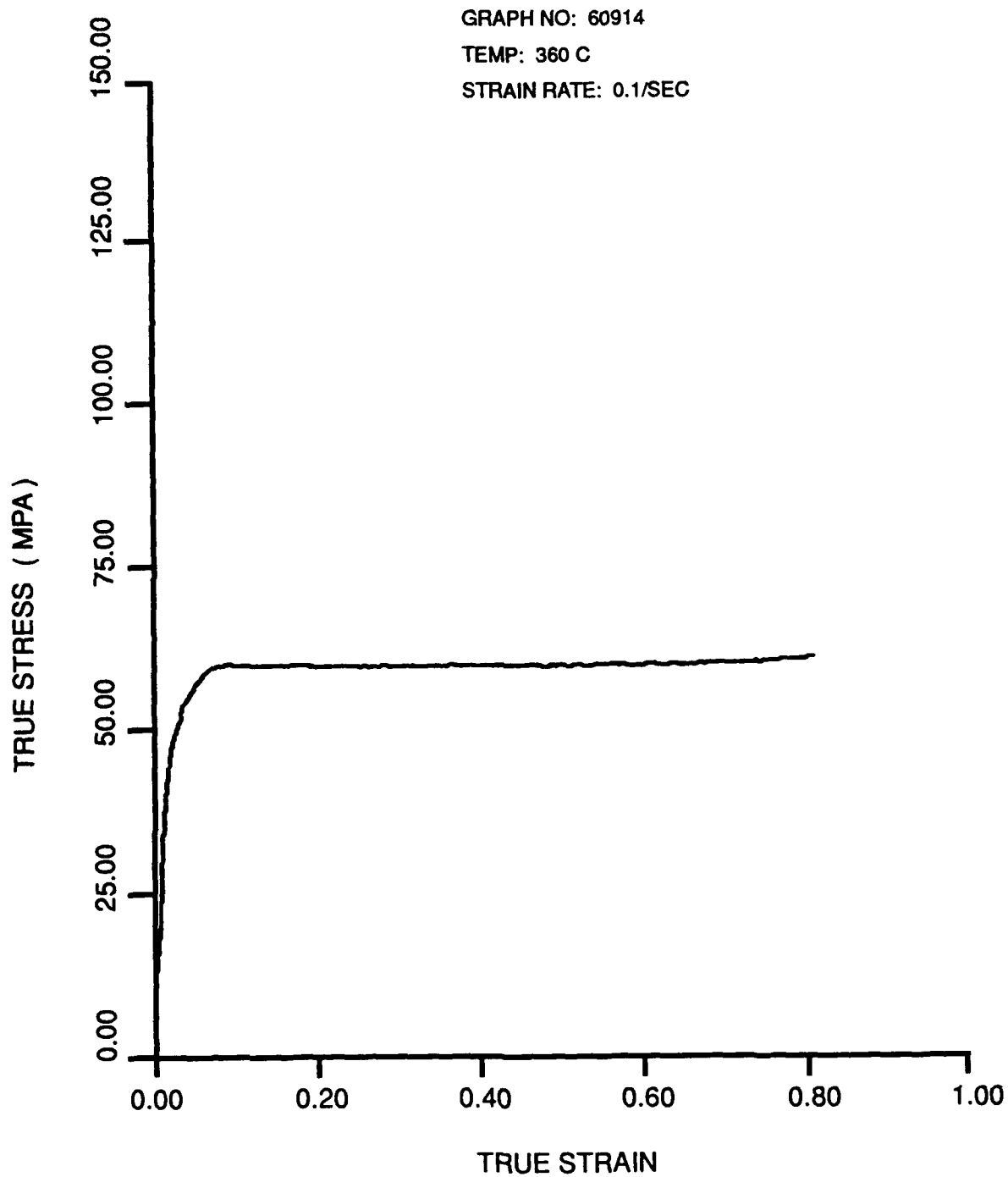


NCENT

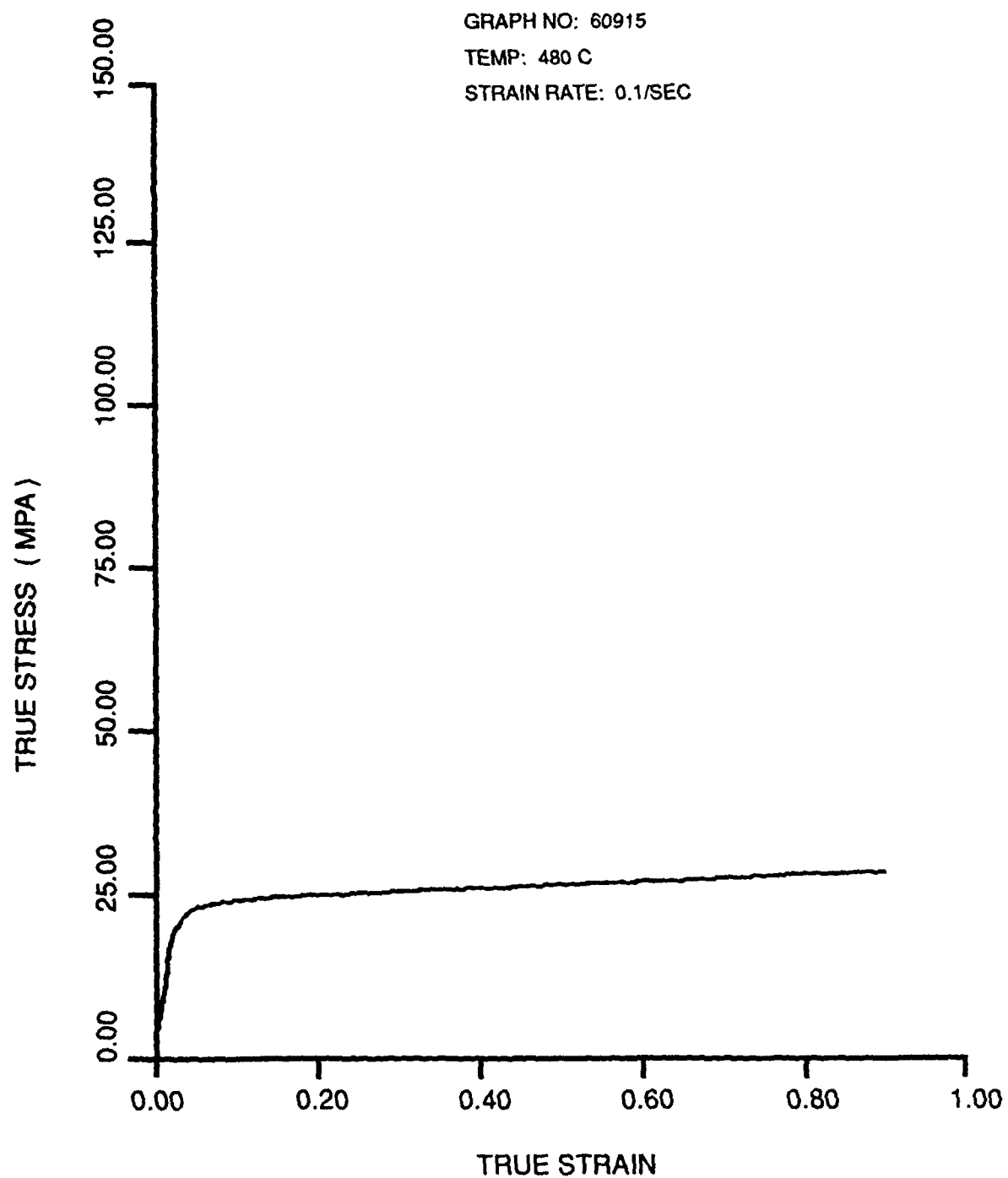


NCEMT

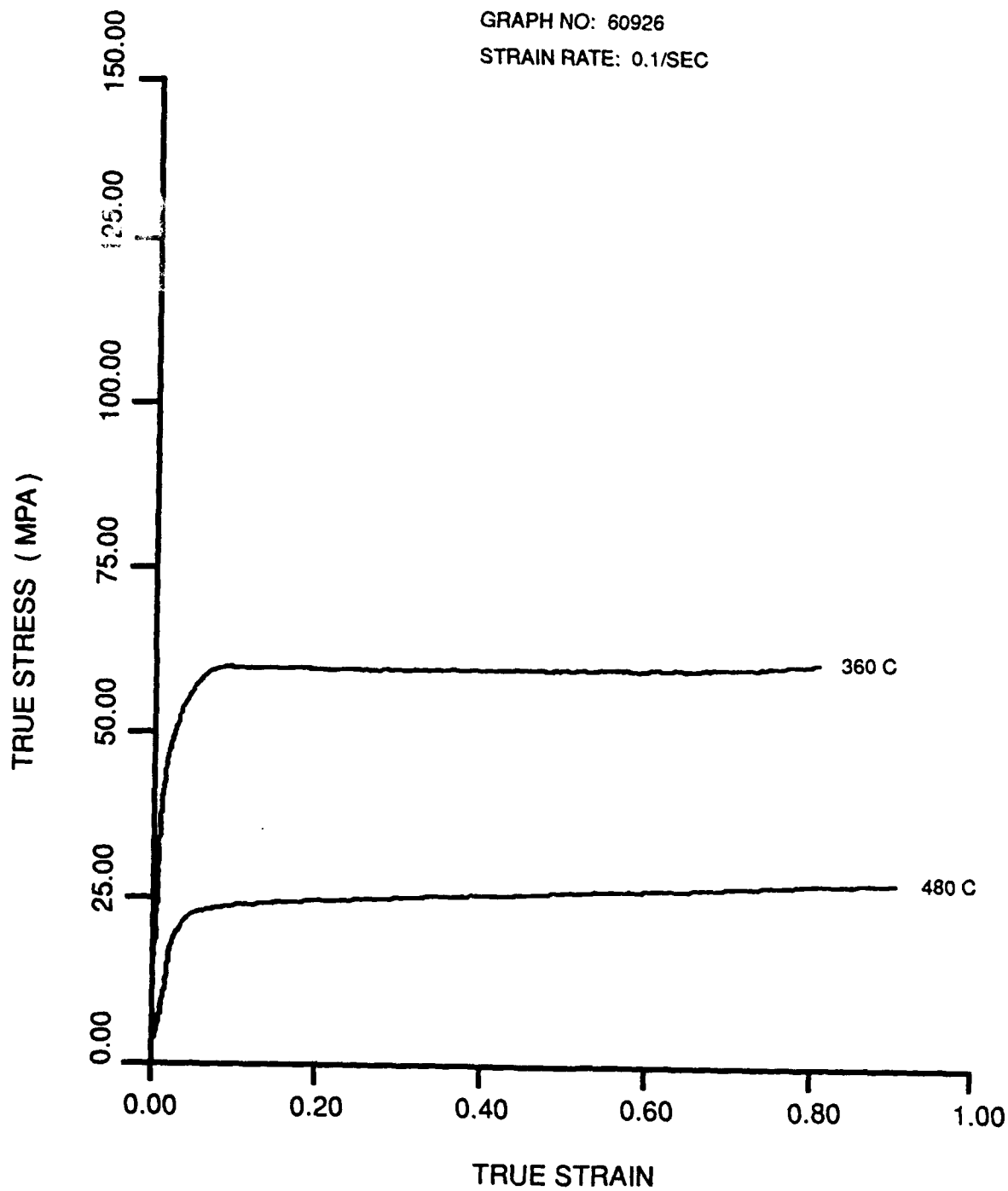




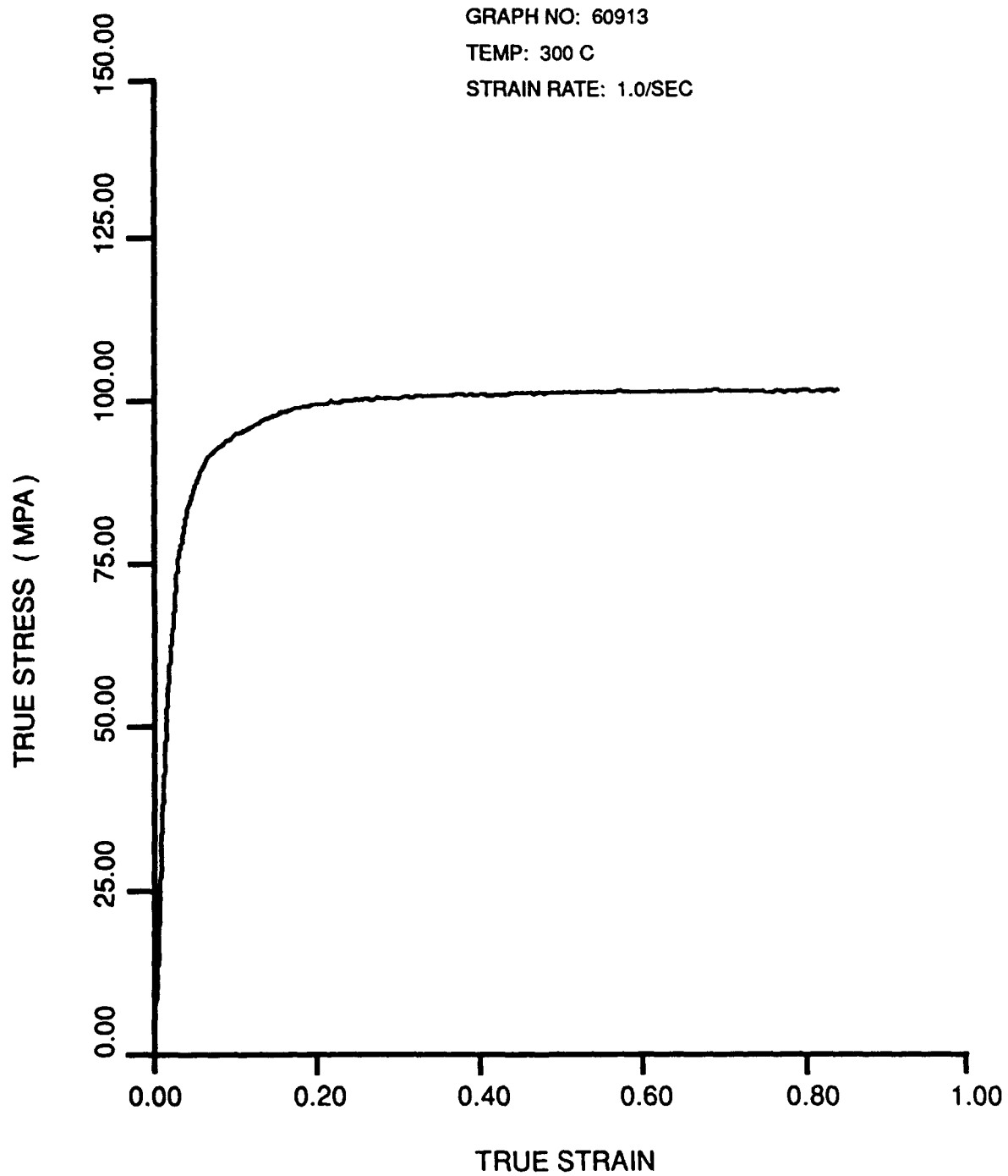
NCEMT



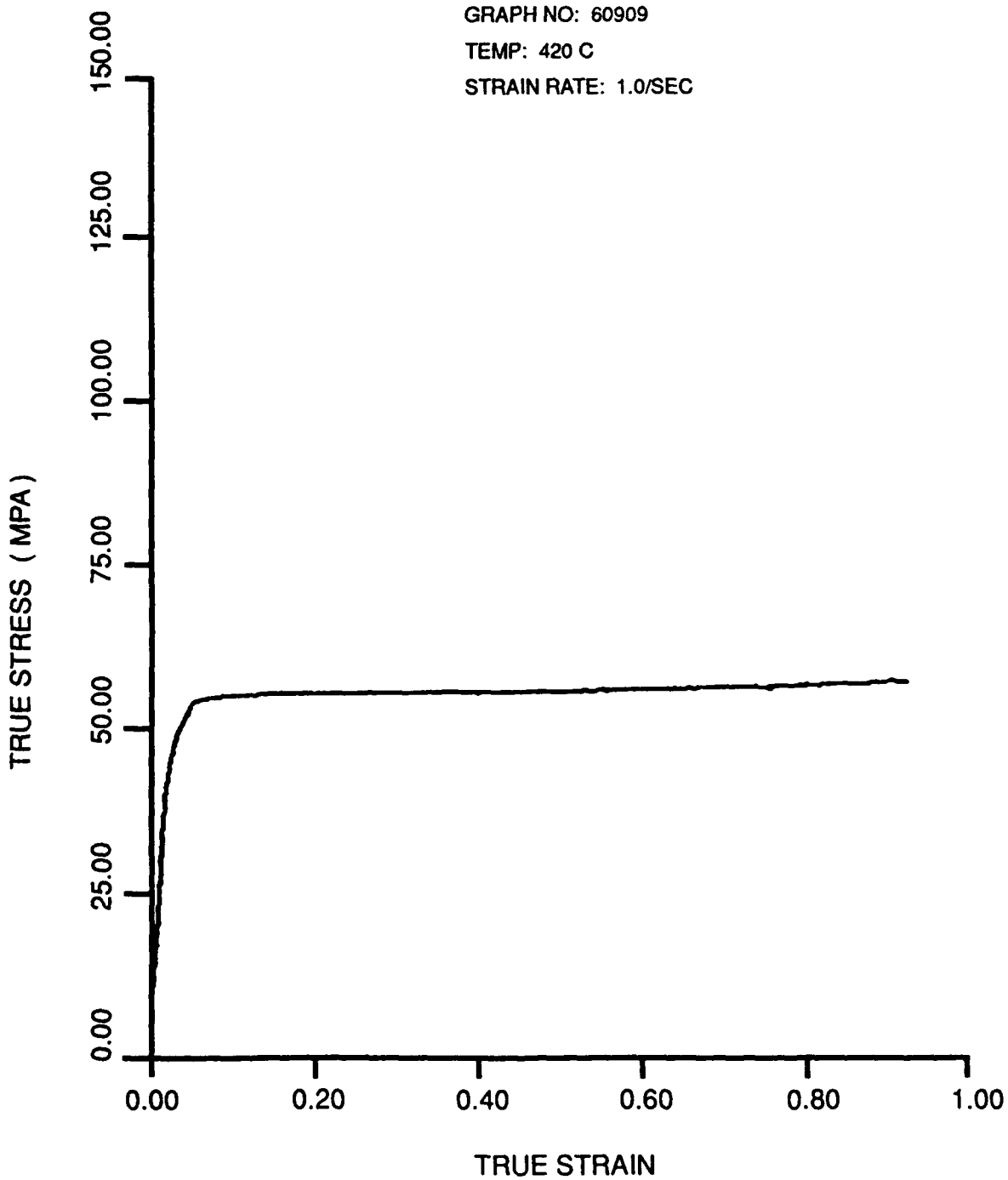
NCEM



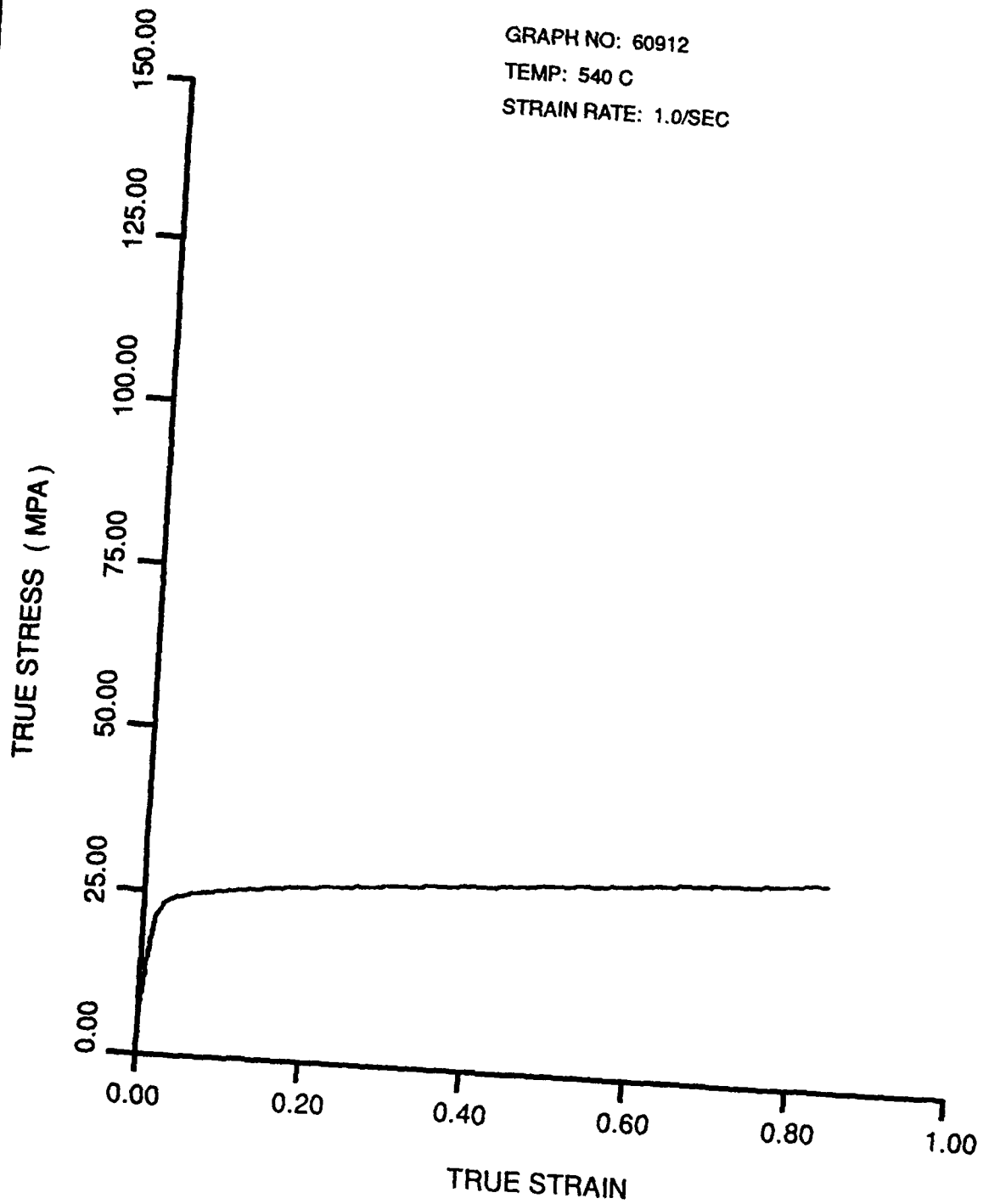
NCEMT



NCEMT

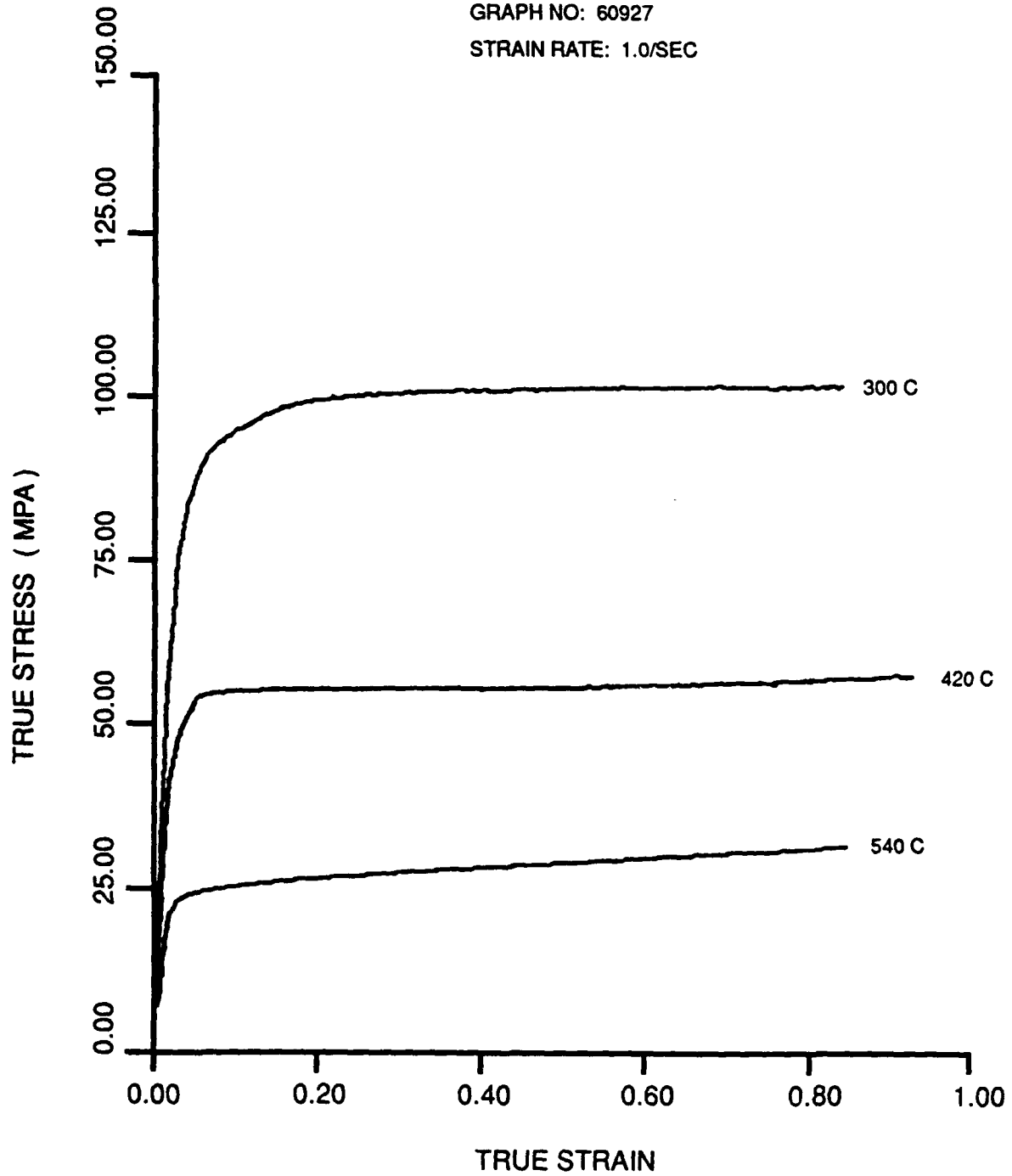


NCEMT

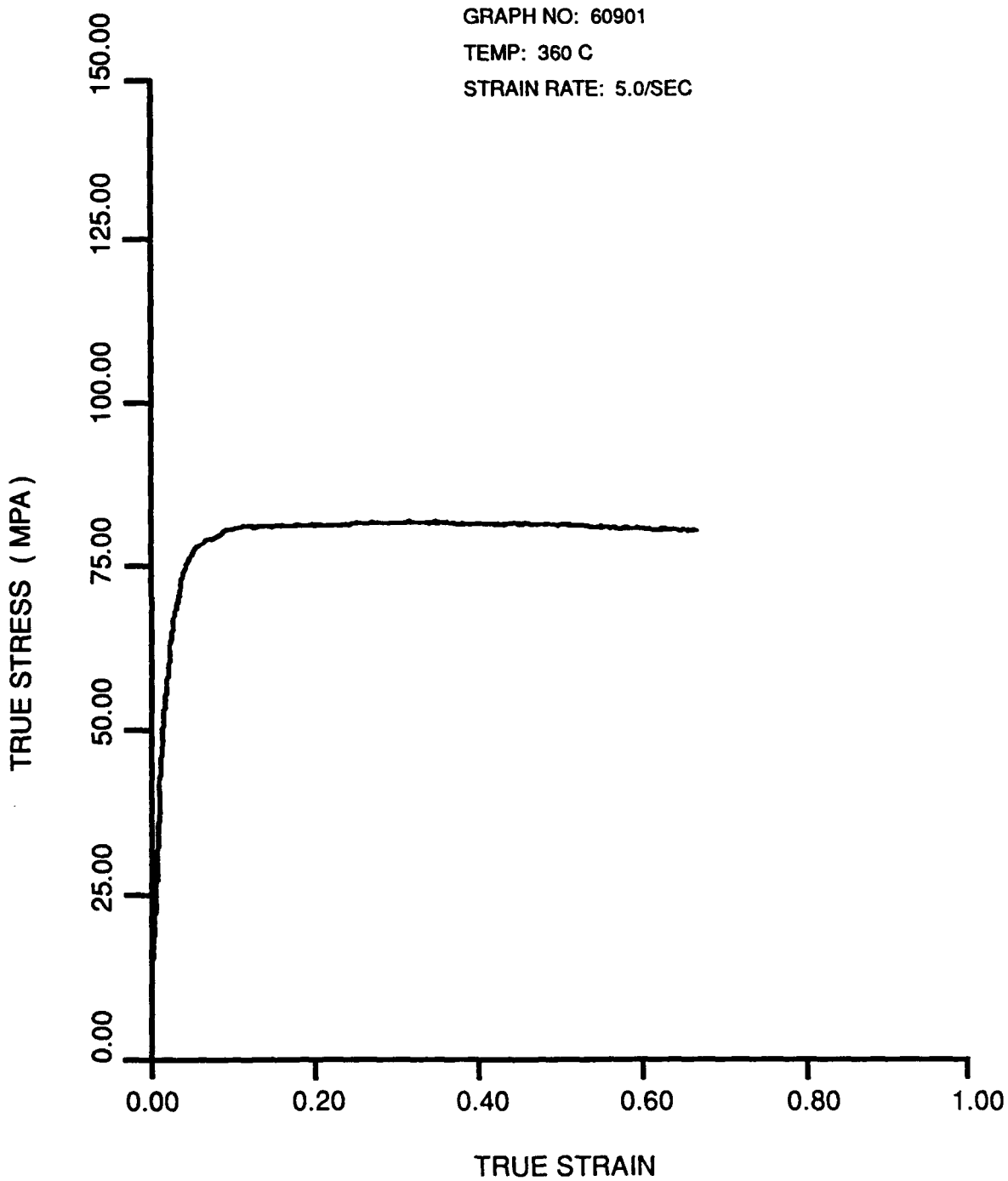


NCEMT

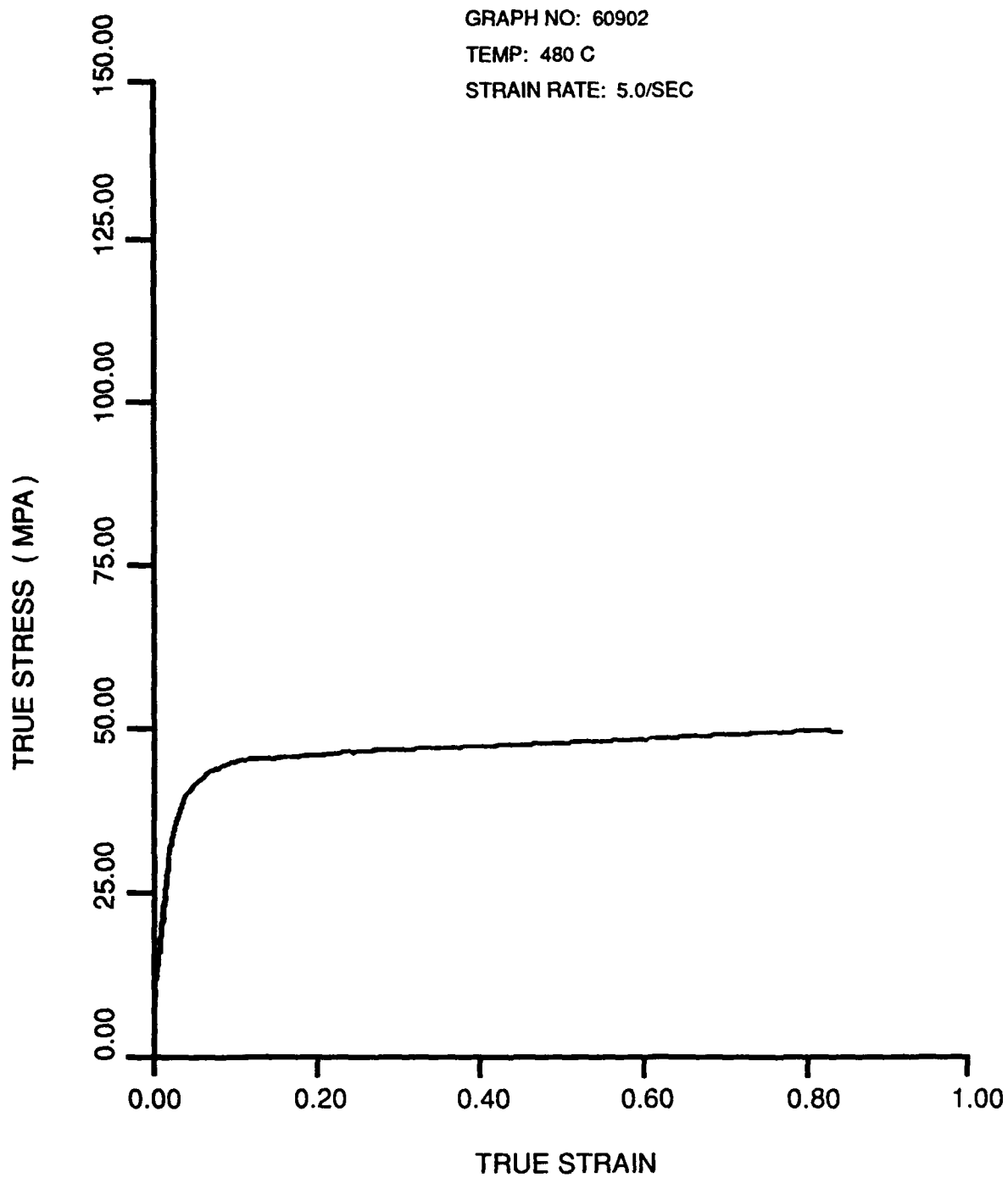
GRAPH NO: 60927
STRAIN RATE: 1.0/SEC



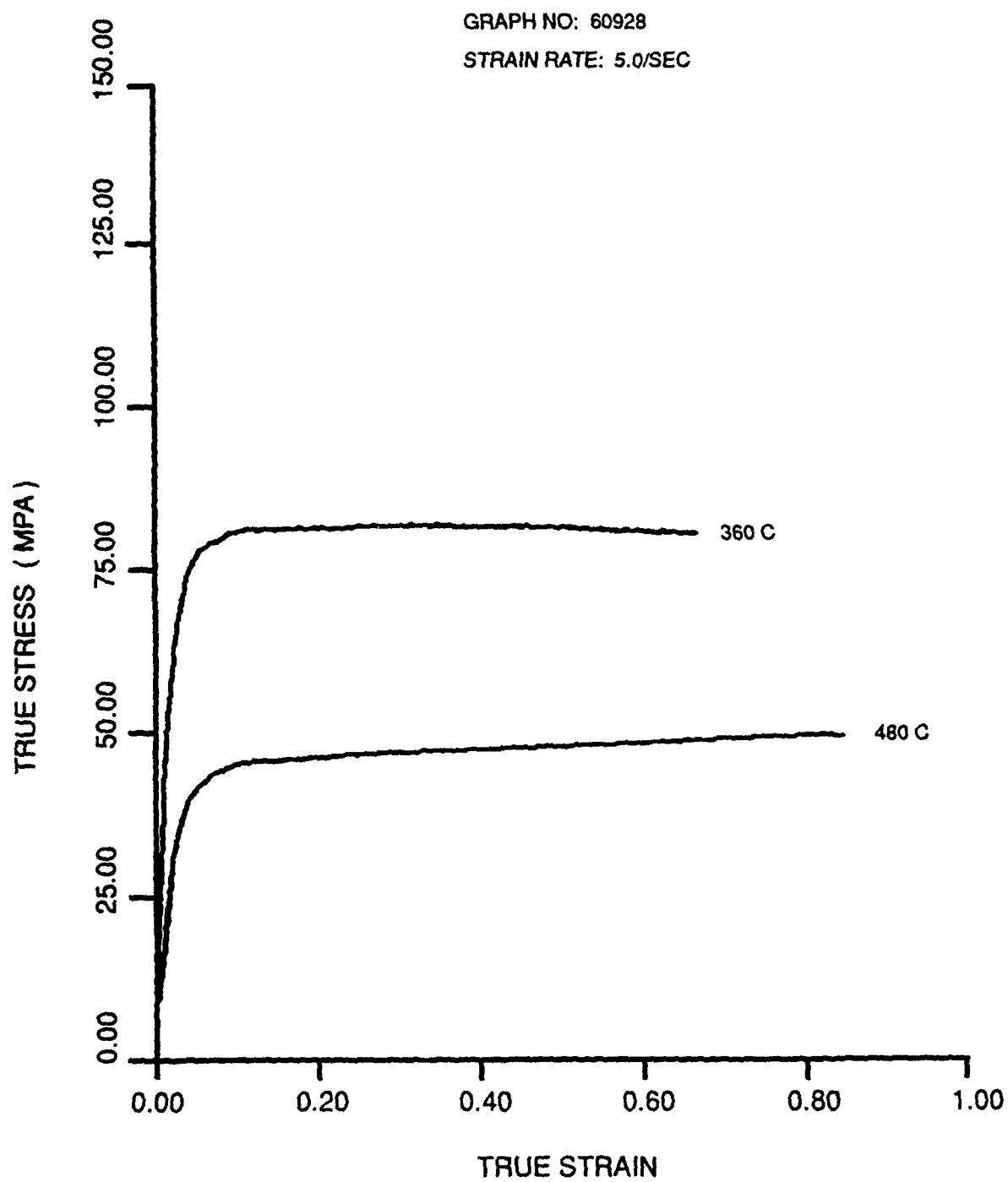
NCEMT



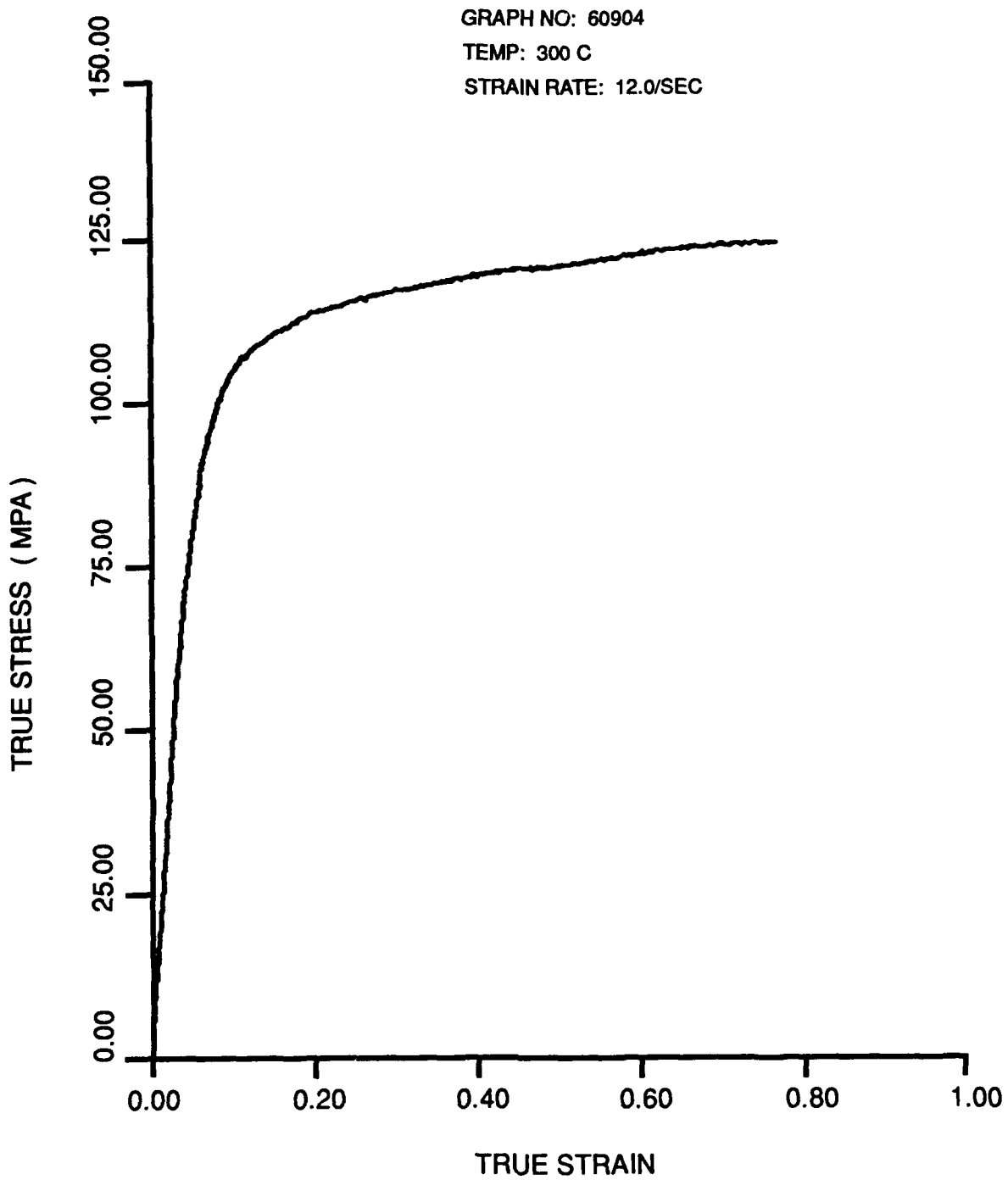
NCEMT



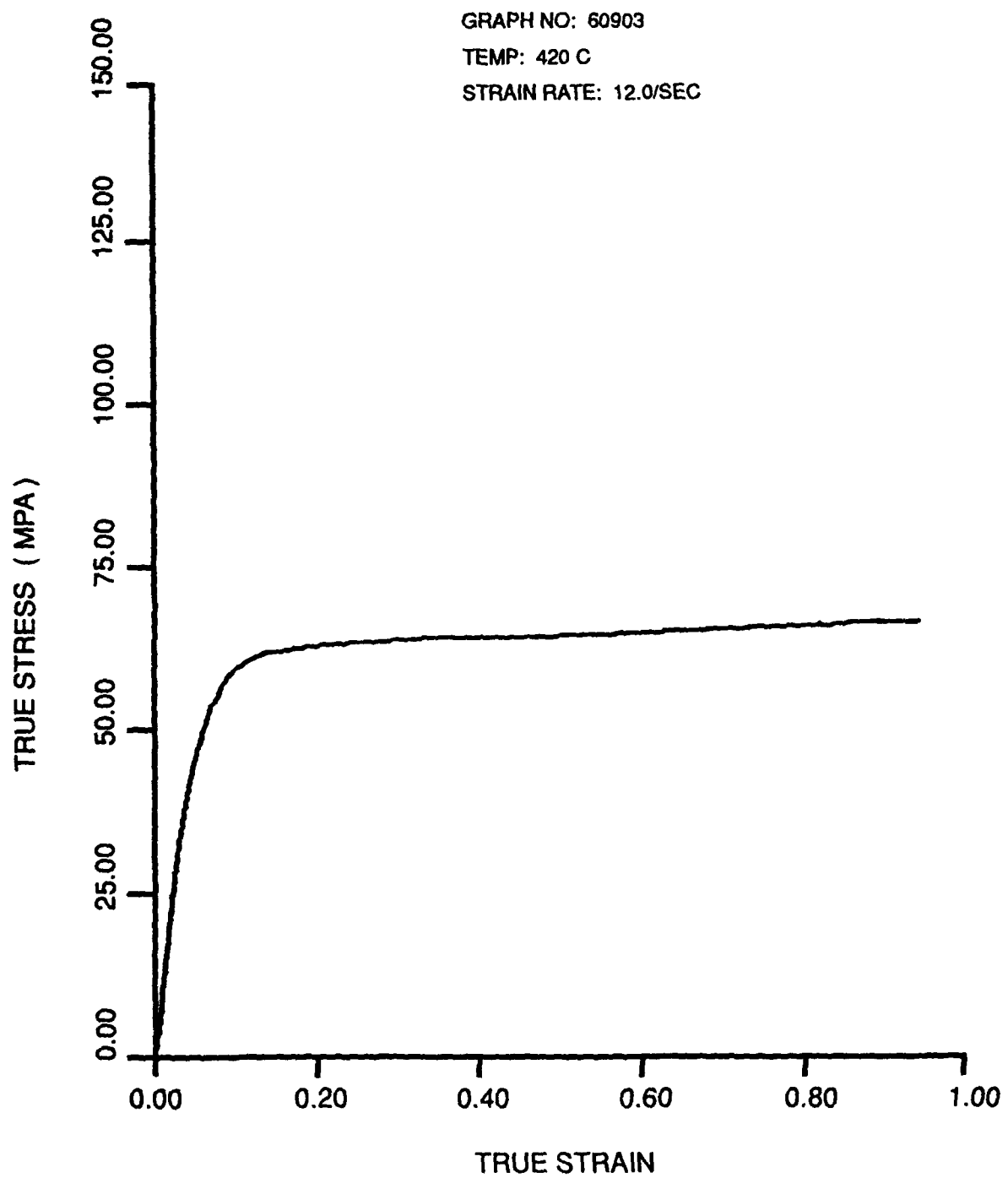
NCEMT



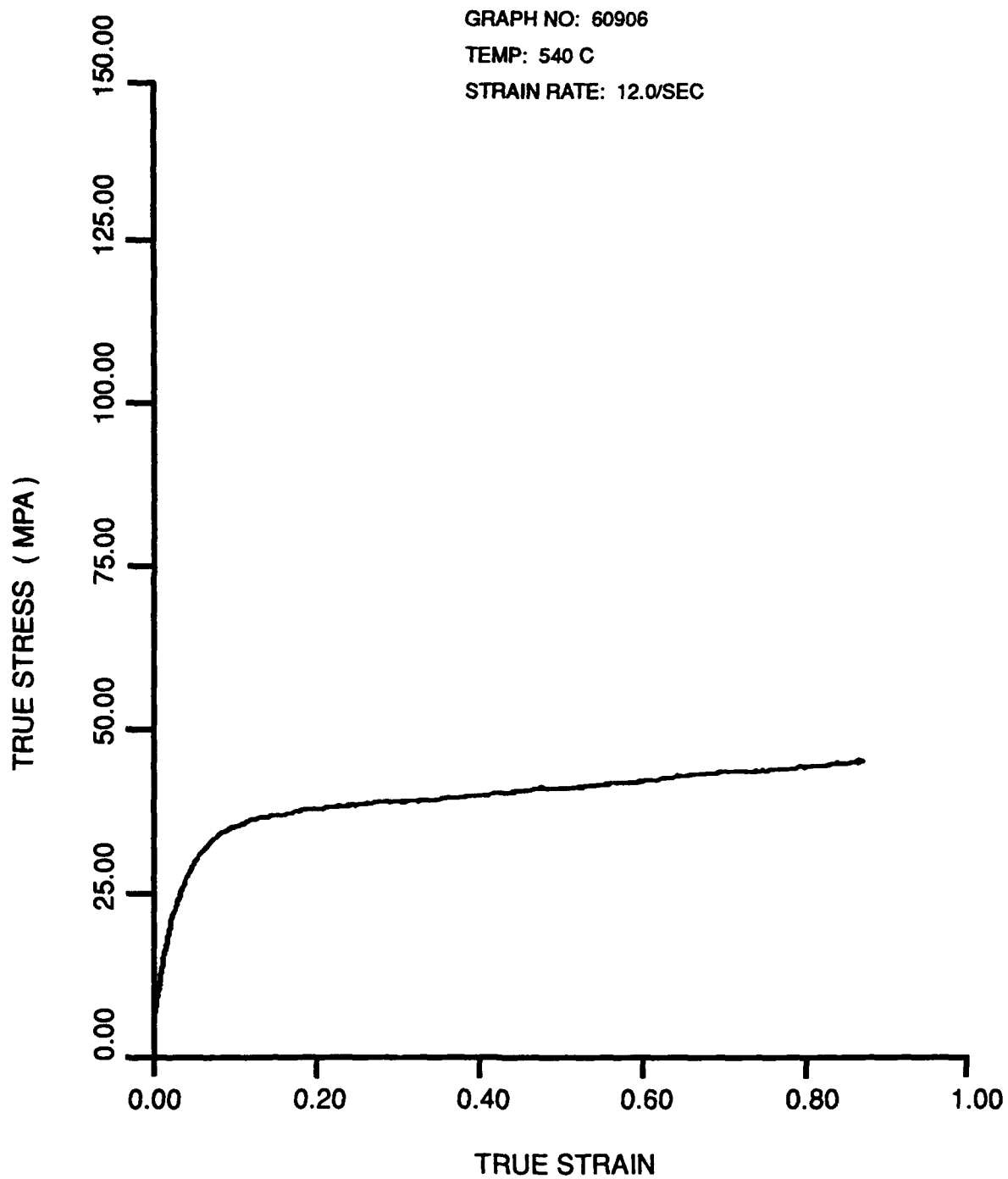
NCEMT



NCEMT

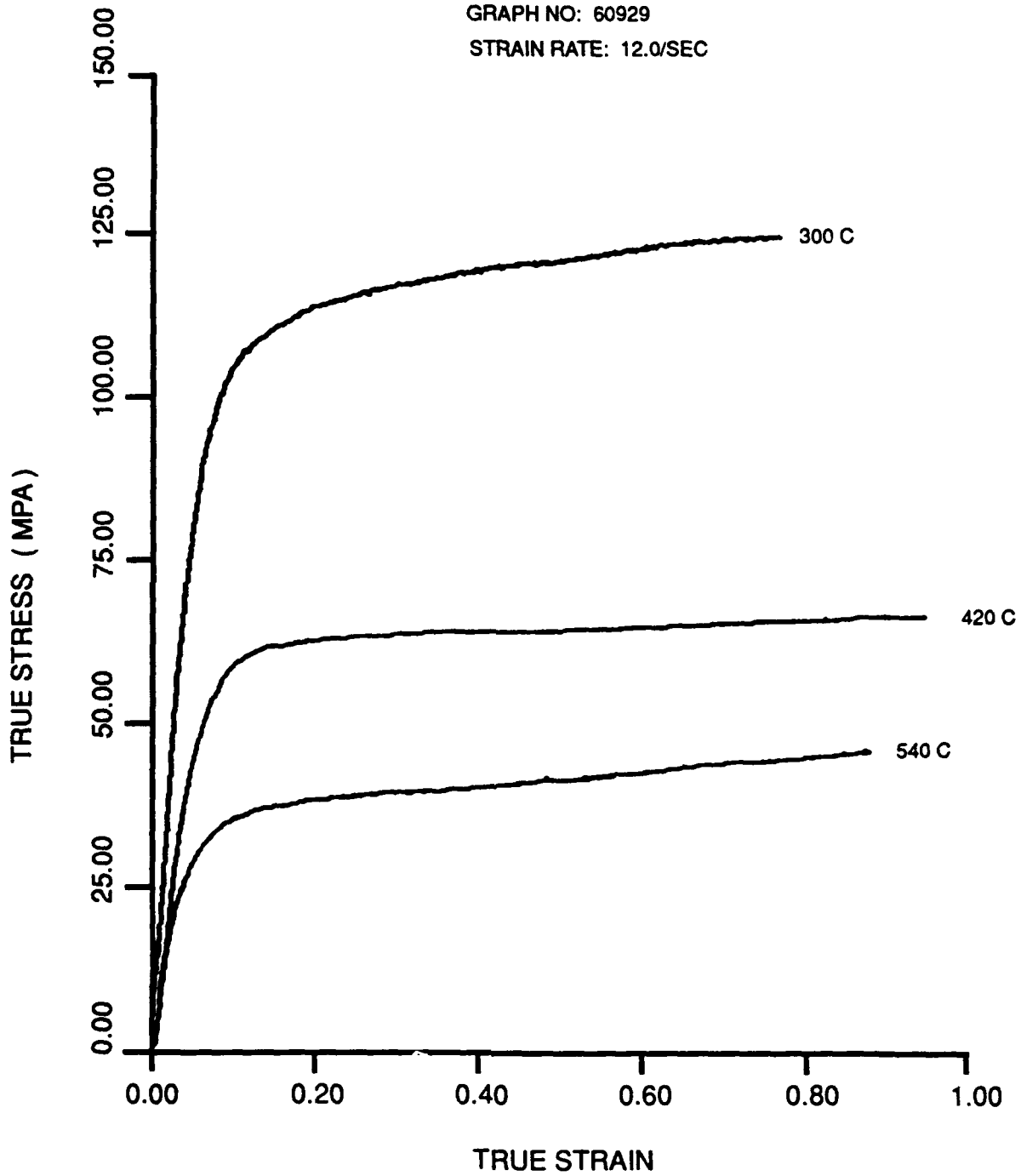


NCEMT



NCEMT

GRAPH NO: 60929
STRAIN RATE: 12.0/SEC



NCEMT